ABSTRACT:

We present a preliminary design and experimental results of a Gaussian noisereduction method for ultrasound images. Our method utilizes a Wienerfiltering algorithm with pseudo-inverse technique. The method is capable of solving the Gaussian noise problem in ultrasound image by setup a constant dB of noise function. The key idea of the Wienerfiltering algorithm is to process the given ultrasound signal by making the filtering less sensitive to slight changes in input conditions. In this paper, we investigate the possibility of employing this approach for pre-processing ultrasound image application. The application of the proposed method for reducing Gaussian noise is demonstrated by four examples. Meanwhile, we also made the comparisons with median filter, mean filter and adaptive filter; the results reveal that the proposed method has the best noisefiltering capability than other three methods. The results also show that the proposed method produces recovery images with quiet high peak-signal-to-noise ratio.